
CLAIMS

What is claimed is:

1. A tire structure comprising:

5 a tire casing having a top and side walls terminating at a bead portion
and defining a primary air chamber;

a tread bonded to the casing top and defining a road engaging tread
surface, a channel formed in the tread surface and a secondary chamber
formed under a tread portion at said channel, a first air passage through the
casing and into the secondary chamber, a second air passage through the
10 casing at a side wall position of the casing substantially adjacent the bead
portion, and an air line bonded to the interior wall of the casing and
extending from said first air passage to the second air passage; and

a valve unit in said second air passage controlling air into and air out
of second air passage and accordingly through the air line and said first air
15 passage to said second chamber.

2. A tire structure as defined in claim 1 wherein said valve unit includes multiple
valve function including receiving air from the primary chamber for expanding the
secondary chamber and releasing air from the secondary chamber to atmosphere,
and further including remote control actuation.

20 3. A tire structure as defined in claim 2 wherein said valve unit includes an air
pump and air pressure sensor/transmitter.

4. A system for tire stud extension and retraction which comprises:

forming a tire structure including a tire tread bonded to a tire casing
having opposing bead portions for sealing the tire to a support rim, said tire
25 tread provided with a circular channel formed in the tread;

placing a tread strip having studs in the circular channel,

forming a first air passage through the tire casing and into the
circular channel under the tread strip;

forming a second air passage through a side wall of the tire casing substantially adjacent to a bead portion, and extending an air line between the air passages and providing the second air passage with a valve unit.

5 curing the tire structure resulting in a structure enabling the introduction and relief of air pressure through said valve unit and air line to said circular channel for extending and retracting the stud carrying tread strip.